REMARKS

Restriction Requirement/Election

Applicant requests reconsideration of the restriction requirement in view of the allowability of subject matter demonstrated by this Response. Claims 21 to 43 should be examined in view of the allowability of claims 1-20. Further, the PTO has failed to make any showing that the non-elected claims are both independent and distinct from the elected claims as required by 35 U.S.C. § 121.

Response to Rejections

Claims 1-43 were presented for examination with claims 1-20 being examined and claims 21-43 subject to restriction and being withdrawn from consideration. Claim 11 has been amended to correct a minor grammatical error by changing "and" to –an–. No new matter is involved.

Claims 1-3 and 6-20 have been rejected while claims 4 and 5 have been objected to because they depend from a rejected claim.

Claims 1-3 and 12-20 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,681,019 to Kitano et al. ("Kitano"). Kitano discloses various embodiments in which the output of a white noise generator 12 is passed through a low pass filter 14 "configured as a secondary two-stage filter having a cut off frequency of 220 Hz," col 5, lines 36-37, to produce a test signal. The white noise test signal is applied to left and right speakers while a human listener is positioned between the two speakers. The connection polarity of one of the speakers is reversed under control of

the listener until the listener decides, based on the sounds received from the two speakers that the two speakers are connected with the same phase. The use of a white noise test signal is important to the system to avoid the generation of a specific signal frequency that might create a standing wave due to acoustic reflections within the room that would make it difficult for the human listener to detect speaker polarity.

Subject to the abilities of the human listener, the Kitano system can place the two speakers in phase with each other, but cannot assure that the speakers are connected in phase with the signal source. That is, even after the human phase adjustment is made, both speakers might be in phase with the signal source or both speakers might be out of phase with the signal source. Because white noise is used as the signal source, the Kitano system provides no way to tell the difference. However, a sound system can experience considerable degradation of sound quality if the speakers are not in phase with the signal source as well as each other.

Claim 1 patentably distinguishes over the Kitano system by reciting "an audio signal source generating an audio signal having a first frequency component having a selected polarity that is marked by a second frequency component that is distinguishable from the first frequency component" [emphasis added].

The Office Action asserts that the signal from Kitano's white noise generator "inherently will contain a first audio frequency component", but does assert that the frequency component has a selected polarity as recited in claim 1. Instead, the Office Action seeks to substitute the entire white noise signal for the claimed frequency

component and then to substitute phase for polarity. It then asserts that the entire white noise signal has a selected phase. However, this is not what claim 1 recites.

The white noise signal generated by the Kitano system is pseudo-random in nature and thus does not have "a first frequency component having a selected polarity." Furthermore, other frequency components of the white noise signal occur pseudo-randomly and thus could not mark the selected polarity of the first frequency component even if the selected polarity of the first frequency component existed. The Office Action thus fails to establish a *prima facie* case of anticipation because the white noise signal generated by the Kitano system does not have a first frequency component having a selected polarity that is marked a second frequency component. See the attached Declaration of Barry T. Lee for further evidence that the white noise signal generated by the Kitano system does not have a first frequency component having a selected polarity that is marked a second frequency component.

Claim 1 also patentably distinguishes over kitano by reciting a phase detector "detecting the marking of the first frequency component by the second frequency component and providing an indication as to whether or not the frequency component has the selected polarity at the occurrence of the mark". The Office Action proposes that a human can serve as the detector. However, Kitano does not teach that a human can detect whether or not a frequency component has a selected polarity at the occurrence of a mark provided by a second frequency component and the Office Action provides no evidence that a human can serve as such a detector. To the contrary, the attached Declaration of Barry T. Lee demonstrates that a human is not capable of

acting as such a detector. The phase detector recitation of claim 1 thus provides a further recitation that patentably distinguishes over the system of Kitano.

Claim 2-3 depend from claim 1, incorporate by reference the patentable features of claim 1 and further distinguish over the system of Kitano. Claim 2 recites the first frequency component being a lower frequency component and the second frequency component being a higher frequency component. Kitano does not teach any frequency components having the characteristics recited in claim 1, let alone the specific configuration where the first frequency component is a lower frequency component and the second frequency component is a higher frequency component. Claim 3 more specifically recites the first frequency component having a frequency in the range of 50 to 300 Hertz and the second frequency component having a frequency greater than or equal to 2 Khz. Since the white noise signal generated by the Kitano system is low pass filtered with a cutoff frequency of 220 Hertz (col 5, lines 36-37), the Kitano signal could not have a second frequency component with a frequency greater than or equal to 2 Khz.

The objection to allowable claims 4 and 5, which depend from claims 3 and 1, should be obviated by the demonstrated allowability of claims 1 and 3.

Claim 12, which has been rejected as anticipated by Kitano, recites generation of "an audio signal having a first frequency component, a portion of the first frequency component having a selected polarity that is marked by a second frequency component that is distinguishable from the second frequency component". As discussed above with respect to claim 1, the pseudo-random white noise signal generated by Kitano does

not have a second frequency component marking a selected polarity of a first frequency component as recited in claim 12. The office action merely makes a bare, unsupported assertion that the white noise signal generated by Kitano, which is completely different from the signal generated by the preferred embodiment of the present application, has the claimed characteristics, with no demonstration that the white noise signal does in fact have the claimed characteristics. This is not sufficient to provide a *prima facie* case of anticipation. However, the signal generated by Kitano does not have the characteristics recited in claim 12 and claim 12 thus patentably distinguishes over the system of Kitano.

Similarly as discussed with respect to claim 1, a human cannot perform the function of the recited phase detector as proposed by the Office Action. The phase detector recitation of claim 12 thus provides a further patentable distinction over the cited art. The Office Action asserts that the Kitano system can detect phase reversals, but makes no showing that the human of the Kitano system can detect the marking of a selected polarity as recited in claim 12. Kitano suggests that a human can detect the broadcasting of two out of phase white noise signals from two different speakers, but does not suggest that a human can detect the marking of a selected polarity of a first signal component by a second signal component. The Office Action thus fails to establish a *prima facie* case for the anticipation of claim 12 by the Kitano system.

Claim 13 recites an audio signal source providing an audio test signal "having a plurality of repetitive cycles of an audio signal" and "with one of the polarity portions of a selected polarity being marked with a higher frequency signal component". The Office

action contends that the white noise signal generated by generator 10 has positive and negative frequency components. However, this is not the language of claim 13. The Office Action does not even contend that the Kitano white noise signal has the claimed features, let alone attempt to explain how a pseudo random white noise signal can have "a plurality of repetitive cycles of an audio signal" as recited in claim 13.

Applicant is unable to find in Kitano any teaching that the white noise signal has negative frequency components as alleged by the Office Action and does not understand how the alleged negative frequency component has any relationship to claim 13.

The Office Action again attempts to confuse the phase reversal of the entire white noise signal as taught by Kitano with the recited feature of "at least one of the polarity portions of a selected polarity being marked with a higher frequency signal component." Inverting the phase of a white noise signal is completely different from the claimed feature of using a higher frequency signal component to mark a selected polarity of an audio signal having repetitive cycles. Kitano thus fails to anticipate the audio signal source recitation of claim 13 and the Office Action fails to establish a *prima facie* case of anticipation.

Claim 13 also recites a phase detector "detecting the higher frequency signal component and providing an indication as to whether or not the higher frequency signal component is coincident with the selected polarity of the lower frequency signal component." As discussed previously, neither Kitano nor the Office action provide any indication that a human listener can detect the polarity of a lower frequency signal

component at the occurrence of a higher frequence marking signal. To the contrary, the accompanying declaration of Barry T. Lee demonstrates that a human cannot perform the claimed detection. Claim 13 thus provides further distinction over Kitano.

Claim 14 recites an audio signal source "including a record medium having an audio frequency test signal recorded thereon and a medium player reproducing the recorded audio frequency test signal". The Office Action asserts that these claim recitations are anticipated by the Kitano white noise generator 10 "which inherently will contain a positive and negative frequency components". However, claim 14 does not recite "positive and negative frequency components." Furthermore, Kitano does not suggest that his noise generator involves a recorded medium and medium player and the Office Action has made no attempt to show that a noise generator "necessarily" contains the recited record medium and player as required to establish inherency. The Office Action provides no evidence that white noise contains negative frequency components or that such components would inherently or "necessarily" require a record medium and player as recited in claim 14.

Claim 14 further recites the test signal including "a lower frequency signal component having a portion thereof of a selected polarity marked with a higher frequency signal component". The Office Action asserts that this recitation is anticipated by Kitano's disclosure of a low pass filter and selecting a positive or negative phase. Kitano actually teaches inverted and non-inverted phases, not positive and negative phases. In any event having a positive or negative phase (if there were such a thing) would not anticipate marking a selected polarity portion of a lower frequency

signal component with a higher frequency signal component as recited in claim 14. The Office Action has thus failed to establish a *prima facie* case for anticipation of claim 14 by Kitano.

Claim 14 further recites a phase detector detecting the marking of the selected polarity of the lower frequency signal component by the higher frequency signal component. The Office Action again proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the marking of a selected polarity of a frequency component by a different frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so.

Claim 15 recites means for generating "an audio signal having a first frequency component having a selected polarity that is marked by a second frequency component that is distinguishable from the first frequency component". The Office action proposes that Kitano's white noise signal inherently contains positive and negative components. It is not clear what a positive or negative "component" is, but this is not what claim 15 recites. Claim 15 recites an audio signal having a first frequency component having a selected polarity that is marked by a second frequency component. As discussed above, there is no showing how a pseudo-random signal could mark a "selected" polarity of a signal component, even if the signal component existed in a pseudo-random signal (no such showing has been made).

The Office Action further contends that Kitano anticipates the marking of the selected polarity with a second frequency component by selecting a positive phase or

negative phase. Neither Kitano nor the Office Action show how a signal can have a positive phase or a negative phase. Kitano does disclose selective inversion of his test signal phase, but this has nothing to do with a "positive" or "negative" phase and does not anticipate the claimed marking of a "selected polarity" of a signal component. The Office Action fails to establish a *prima facie* case of anticipation of claim 15.

Claim 15 further recites a phase detector "detecting the second frequency component" and indicating "whether or not the first frequency component has the selected polarity at the occurrence of the second frequency component". The Office Action again proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the marking of a selected polarity of a frequency component by a different frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so.

Claim 16 has been rejected as being anticipated by Kitano. Claim 16 recites an audio signal source generating "an audio signal having a first, lower frequency signal component, a portion of the first , lower frequency signal component having a selected polarity that is marked by a second, higher frequency signal component having a repetition rate less than 150 time per second." The Office Action asserts that the Kitano white noise signal will "inherently" contain positive and negative components. Applicant objects to this assertion of inherency. The Office Action relies upon a teaching at Col. 5, lines 29-48 that the state of the Kitano white noise signal is defined as a positive phase signal as it is generated and a negative phase signal when inverted. However,

selective inversion of an entire white noise signal is much different than marking a selected polarity of a portion of a lower frequency signal component as recited in claim 16. Pseudo-randomly occurring signal values do not constitute "a selected polarity" of a lower frequency signal component, cannot provide marking of a non-existent selected polarity of a lower frequency signal component and cannot provide marking by a higher frequency signal component having a repetition rate less than 150 times per second. The "phase" of a pseudo-random white noise signal (*i.e.,* inverted or not inverted) is not the same as the "polarity" of a lower frequency signal component.

Claim 16 also recites a phase detector "detecting the occurrence of the higher frequency signal component mark and providing an indication as to whether or not the first, lower frequency component has the selected polarity at the occurrence of the higher frequency signal component." The Office Action again proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the marking of a selected polarity of a frequency component by a different frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so.

Claim 17 has been rejected as being anticipated by Kitano. However, the Office Action fails even to establish a *prima facie* case of anticipation. Claim 18 recites "a recorded medium having an audio frequency test signal recorded thereon." The Office Action asserts that this limitation is met by Kitano's white noise generator. However, applicant can find no teaching by Kitano that the white noise generator is a recorded

medium and the Office Action makes no such assertion. There is no showing that this claim feature has been met by Kitano.

Claim 17 also recites "the audio frequency test signal including a lower frequency signal component having a portion thereof of a selected polarity marked with a higher frequency signal component." The Office Action contends that a teaching that Kitano's white noise signal can be inverted to provide what Kitano defines as positive and negative phases satisfies this recitation. However, inversion of a white noise signal is much different from the marking of a portion of a lower frequency signal component with a higher frequency signal component.

The Office Action relies upon a teaching at Col. 5, lines 29-48 that the state of the Kitano white noise signal is defined as a positive phase signal as it is generated and a negative phase signal when inverted. However, selective inversion of an entire white noise signal is much different than marking a selected polarity of a portion of a lower frequency signal component as recited in claim 17. Pseudo-randomly occurring signal values do not constitute "a selected polarity" and cannot provide marking of a non-existent selected polarity. The "phase" of a pseudo-random white noise signal (*i.e.*, inverted or not inverted) is not the same as the "polarity" of a lower frequency signal component of the test signal.

Claim 17 further recites a phase detector receiving the test signal from the audio system and "detecting the marking of the selected polarity of the lower frequency signal component by the higher frequency signal component " and providing an indication of whether or not the correct polarity is found to be marked. The Office Action again

proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the marking of a selected polarity of a frequency component by a different frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so.

Claim 18 has been rejected as being anticipated by Kitano. However, the Office Action fails to provide a *prima facie* case of anticipation. Claim 18 recites "means for providing an audio frequency test signal having a higher frequency signal component and a lower frequency signal component with the higher frequency signal component occurring while the lower frequency signal component has a selected polarity." The Office Action proposes that this recitation is met by inverting the white noise signal generated by Kitano. However, inversion of a complete test signal does not cause a higher frequency signal component to occur while the lower frequency signal component has a selected polarity.

Claim 18 also recites means for phase testing "providing an indication as to whether or not the higher frequency signal component occurs during the selected polarity of the lower frequency signal component." The Office Action again proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the marking of a selected polarity of a frequency component by a different frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so.

Claim 19 has been rejected as being anticipated by Kitano. However, the Office Action fails to provide a *prima facie* case of anticipation. Claim 19 recitesproviding an audio frequency test signal "having a higher frequency signal component and a lower frequency signal component, with the higher frequency signal component occurring while the lower frequency signal component has a selected polarity." The Office Action proposes that this recitation is met by inverting the white noise signal generated by Kitano. However, inversion of a complete test signal, *i.e.,* phase reversal, is not the same as identifying a polarity of a lower frequency component of a signal and does not cause a higher frequency signal component to occur while the lower frequency signal component has a selected polarity.

Claim 19 also recites "providing an indication as to whether or not the higher frequency signal component occurs during the selected polarity of the lower frequency signal component in the received representation of the audio frequency test signal." The Office Action again proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the occurrence of a higher frequency signal at a selected polarity of a lower frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so.

Claim 20 has been rejected as being anticipated by Kitano. However, the Office Action fails to provide a *prima facie* case of anticipation. Claim 20 recites "generating an audio frequency test signal with the signal source, the audio frequency test signal having a higher frequency signal component and a lower

frequency signal component, with the higher frequency signal component occurring while the lower frequency signal component has a selected polarity." The Office Action proposes that this recitation is met by inverting the white noise signal generated by Kitano. However, inversion of a complete test signal, *i.e.,* phase reversal, is not the same as the occurrence of a higher frequency signal component while a lower frequency signal component has a selected polarity.

Claim 20 further recites "providing an indication as to whether or not the received representation of the audio frequency test signal has the higher frequency signal component and the lower frequency signal component with the higher frequency signal component occurring during the selected polarity of the lower frequency signal component." The Office Action again proposes that Kitano's human listener could perform this function. However, as discussed above, neither Kitano nor the Office Action provide any evidence that a human can detect the occurrence of a higher frequency signal at a selected polarity of a lower frequency component. To the contrary, the Declaration of Barry T. Lee provides evidence that a human could not do so. The Office Action also fails to provide any evidence that a human listener could detect the occurrence of a higher frequency signal component and a lower frequency signal component within the pseudo-random white noise test signal provided by Kitano.

Claims 6-8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano in view of U.S. Patent 4,648,113 to Horn et al. ("Horn"). The Office Action fails to establish a *prima facie* case of obviousness. The Office Action does not explain how the two mutually incompatible references are to be combined or what the

motivation would be for such a non-identified combination if it were to be made. The Office Action simply makes the unsupported assertion that it would have been obvious "to include a lights (sic) to provide indication of a polarity between two signal (sic) in order to determine the proper polarity as taught by Horn."

Claim 6 depends from claim 1 and incorporates by reference all of the patentable features recited in claim 1. Claim 6 further defines the phase detector as including a light and "wherein the phase detector provides an indication as to whether or not the first frequency component has the selected polarity at the occurrence of the mark by illuminating the light when the first frequency component has the selected polarity at the occurrence of the mark and not illuminating the light when the first frequency component does not have the selected polarity at the occurrence of the mark. It will be recalled that Kitano uses a human as the phase detector, but the Office Action does not explain how the human will be caused to light up by Horn's CRT. Furthermore, as explained above, the human is unable to detect the first and second frequency components or the marking of the selected polarity of the first frequency component by the second frequency component.

Claim 7 also depends from claim 1 and incorporates by reference the patentable features recited in claim 1. Claim 7 further recites the phase detector as having first and second lights with the first light being illuminated when the first frequency component has the selected polarity at the occurrence of the mark and the second light being illuminated when the first frequency component does not have the selected polarity at

the occurrence of the mark . Claim 7 thus further distinguishes the cited art for the same reasons as claim 6 and further recites the use of two lights.

Claim 8 depends from claim 7 and incorporates by reference the patentable features of claims 1 and 7. Claim 8 more specifically recites the first and second lights to be light emitting diodes and defines the selected polarity as a positive polarity.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitano. Claims 9-11 depend from claim 1, incorporate by reference the patentable features of claim 1, and further define the audio signal source as including a recording medium and a player, including a compact disk recording medium and a compact disk player and including an active signal generator, respectively. Applicant can find no teaching in Kitano of the implementation of his white noise generator and no teaching of the further recitations found in claims 9-11. The Office Action thus fails to provide a *prima facie* case of obviousness of claims 9-11.

The Office Action asserts with no basis that it is well known in the art that audio signal sources may include recorded mediums and signal generators such as a compact disk system. Applicant readily concedes that it is well known for compact disks to record audio signals. However, there has been no showing that it was known prior to the present invention for the test signal source to include a compact disk recording medium having the audio signal as set forth in claim 1 (and hence in claims 9-10) recorded thereon and a compact disk player playing the audio signal recorded on the recording medium. Claim 11 recites the audio signal source including an active signal generator generating the audio signal. Because Kitano fails to disclose either the

nature of his signal generator or generation of the recited test signal, the Office Action fails to establish a *prima facie* case of unpatentability and claims 9-11 provide further patentable distinctions over the cited art.

Respectfully submitted,

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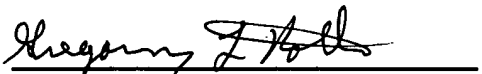
By: 
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